

## SEQUENCE LISTING

<110> Rybak, Susanna M.  
 Newton, Dianne L.  
 The United States of America  
 as represented by The Secretary of the  
 Department of Health and Human Services

<120> Recombinant Anti-Tumor RNase

<130> 015280-343100US

<140> US 09/622,613  
 <141> 2000-08-17

<150> US 60/079,751  
 <151> 1998-03-27

<150> WO PCT/US99/06641  
 <151> 1999-03-26

<160> 43

<170> PatentIn Ver. 2.0

<210> 1  
 <211> 312  
 <212> DNA  
 <213> Rana pipiens

<220>  
 <221> CDS  
 <222> (1)..(312)  
 <223> ribonuclease (RaPLR1)

<400> 1  
 caa gac tgg ctt acg ttt cag aag aag cac ctg aca aac acc cgg gat 48  
 Gln Asp Trp Leu Thr Phe Gln Lys Lys His Leu Thr Asn Thr Arg Asp  
 1 5 10 15  
 gtt gac tgt aat att atc atg tca aca aac ttg ttc cac tgc aag gac 96  
 Val Asp Cys Asn Ile Ile Met Ser Thr Asn Leu Phe His Cys Lys Asp  
 20 25 30  
 aag aac act ttt atc tat tca cgt cct gag cca gtg aag gcc atc tgt 144  
 Lys Asn Thr Phe Ile Tyr Ser Arg Pro Glu Pro Val Lys Ala Ile Cys  
 35 40 45  
 aaa gga att ata gcc tcc aaa aat gtg tta act acc tct gag ttt tat 192  
 Lys Gly Ile Ile Ala Ser Lys Asn Val Leu Thr Thr Ser Glu Phe Tyr  
 50 55 60  
 ctc tct gat tgc aat gta aca agc agg cct tgc aag tat aaa tta aag 240  
 Leu Ser Asp Cys Asn Val Thr Ser Arg Pro Cys Lys Tyr Lys Leu Lys  
 65 70 75 80  
 aaa tca act aat aca ttt tgt gta act tgt gag aat caa gct cca gta 288  
 Lys Ser Thr Asn Thr Phe Cys Val Thr Cys Glu Asn Gln Ala Pro Val  
 85 90 95

cat ttc gtg ggt gtc gga cat tgc  
His Phe Val Gly Val Gly His Cys  
100

312

<210> 2  
<211> 104  
<212> PRT  
<213> Rana pipiens

<400> 2  
Gln Asp Trp Leu Thr Phe Gln Lys Lys His Leu Thr Asn Thr Arg Asp  
1 5 10 15  
Val Asp Cys Asn Ile Ile Met Ser Thr Asn Leu Phe His Cys Lys Asp  
20 25 30  
Lys Asn Thr Phe Ile Tyr Ser Arg Pro Glu Pro Val Lys Ala Ile Cys  
35 40 45  
Lys Gly Ile Ile Ala Ser Lys Asn Val Leu Thr Thr Ser Glu Phe Tyr  
50 55 60  
Leu Ser Asp Cys Asn Val Thr Ser Arg Pro Cys Lys Tyr Lys Leu Lys  
65 70 75 80  
Lys Ser Thr Asn Thr Phe Cys Val Thr Cys Glu Asn Gln Ala Pro Val  
85 90 95  
His Phe Val Gly Val Gly His Cys  
100

<210> 3  
<211> 312  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:Rana pipiens  
ribonuclease with Met23Leu substitution  
(recombinant RaPLR1 Met23Leu)

<220>  
<221> CDS  
<222> (1)..(312)  
<223> RaPLR1 Met23Leu

<400> 3  
caa gac tgg ctt acg ttt cag aag aag cac ctg aca aac acc cgg gat 48  
Gln Asp Trp Leu Thr Phe Gln Lys Lys His Leu Thr Asn Thr Arg Asp  
1 5 10 15  
gtt gac tgt aat aat atc ctg tca aca aac ttg ttc cac tgc aag gac 96  
Val Asp Cys Asn Asn Ile Leu Ser Thr Asn Leu Phe His Cys Lys Asp  
20 25 30  
aag aac act ttt atc tat tca cgt cct gag cca gtg aag gcc atc tgt 144  
Lys Asn Thr Phe Ile Tyr Ser Arg Pro Glu Pro Val Lys Ala Ile Cys  
35 40 45

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aaa gga att ata gcc tcc aaa aat gtg tta act acc ttt gag ttt tat 192
Lys Gly Ile Ile Ala Ser Lys Asn Val Leu Thr Thr Phe Glu Phe Tyr
    50                55                60

ctc tct gat tgc aat gta aca agc agg cct tgc aag tat aaa tta aag 240
Leu Ser Asp Cys Asn Val Thr Ser Arg Pro Cys Lys Tyr Lys Leu Lys
    65                70                75                80

aaa tca act aat aca ttt tgt gta act tgt gag aat caa gct cca gta 288
Lys Ser Thr Asn Thr Phe Cys Val Thr Cys Glu Asn Gln Ala Pro Val
                85                90                95

cat ttc gtg ggt gtc gga cat tgc 312
His Phe Val Gly Val Gly His Cys
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<210> 4
<211> 104
<212> PRT
<213> Artificial Sequence

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<400> 4
Gln Asp Trp Leu Thr Phe Gln Lys Lys His Leu Thr Asn Thr Arg Asp
    1                5                10                15

Val Asp Cys Asn Asn Ile Leu Ser Thr Asn Leu Phe His Cys Lys Asp
                20                25                30

Lys Asn Thr Phe Ile Tyr Ser Arg Pro Glu Pro Val Lys Ala Ile Cys
                35                40                45

Lys Gly Ile Ile Ala Ser Lys Asn Val Leu Thr Thr Phe Glu Phe Tyr
    50                55                60

Leu Ser Asp Cys Asn Val Thr Ser Arg Pro Cys Lys Tyr Lys Leu Lys
    65                70                75                80

Lys Ser Thr Asn Thr Phe Cys Val Thr Cys Glu Asn Gln Ala Pro Val
                85                90                95

His Phe Val Gly Val Gly His Cys
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<210> 5
<211> 315
<212> DNA
<213> Artificial Sequence

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<220>
<223> Description of Artificial Sequence:Rana pipiens
        ribonuclease with Met at position 1 (recombinant
        Met(-1) RaPLR1)

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<220>
<221> CDS
<222> (1) .. (315)
<223> Met(-1) RaPLR1

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<400> 5  
 atg caa gac tgg ctt acg ttt cag aag aag cac ctg aca aac acc cgg 48  
 Met Gln Asp Trp Leu Thr Phe Gln Lys Lys His Leu Thr Asn Thr Arg  
 1 5 10 15

gat gtt gac tgt aat aat atc atg tca aca aac ttg ttc cac tgc aag 96  
 Asp Val Asp Cys Asn Asn Ile Met Ser Thr Asn Leu Phe His Cys Lys  
 20 25 30

gac aag aac act ttt atc tat tca cgt cct gag cca gtg aag gcc atc 144  
 Asp Lys Asn Thr Phe Ile Tyr Ser Arg Pro Glu Pro Val Lys Ala Ile  
 35 40 45

tgt aaa gga att ata gcc tcc aaa aat gtg tta act acc tct gag ttt 192  
 Cys Lys Gly Ile Ile Ala Ser Lys Asn Val Leu Thr Thr Ser Glu Phe  
 50 55 60

tat ctc tct gat tgc aat gta aca agc agg cct tgc aag tat aaa tta 240  
 Tyr Leu Ser Asp Cys Asn Val Thr Ser Arg Pro Cys Lys Tyr Lys Leu  
 65 70 75 80

aag aaa tca act aat aca ttt tgt gta act tgt gag aat caa gct cca 288  
 Lys Lys Ser Thr Asn Thr Phe Cys Val Thr Cys Glu Asn Gln Ala Pro  
 85 90 95

gta cat ttc gtg ggt gtc gga cat tgc 315  
 Val His Phe Val Gly Val Gly His Cys  
 100 105

<210> 6  
 <211> 105  
 <212> PRT  
 <213> Artificial Sequence

<400> 6  
 Met Gln Asp Trp Leu Thr Phe Gln Lys Lys His Leu Thr Asn Thr Arg  
 1 5 10 15

Asp Val Asp Cys Asn Asn Ile Met Ser Thr Asn Leu Phe His Cys Lys  
 20 25 30

Asp Lys Asn Thr Phe Ile Tyr Ser Arg Pro Glu Pro Val Lys Ala Ile  
 35 40 45

Cys Lys Gly Ile Ile Ala Ser Lys Asn Val Leu Thr Thr Ser Glu Phe  
 50 55 60

Tyr Leu Ser Asp Cys Asn Val Thr Ser Arg Pro Cys Lys Tyr Lys Leu  
 65 70 75 80

Lys Lys Ser Thr Asn Thr Phe Cys Val Thr Cys Glu Asn Gln Ala Pro  
 85 90 95

Val His Phe Val Gly Val Gly His Cys  
 100 105

<210> 7  
 <211> 315  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:Rana pipiens  
 ribonuclease with Met at position 1 and Met24Leu  
 substitution (recombinant Met(-1) RaPLR1 Met23Leu)

<220>  
 <221> CDS  
 <222> (1)..(315)  
 <223> Met(-1) RaPLR1 Met23Leu

<400> 7  
 atg caa gac tgg ctt acg ttt cag aag aag cac ctg aca aac acc cgg 48  
 Met Gln Asp Trp Leu Thr Phe Gln Lys Lys His Leu Thr Asn Thr Arg  
 1 5 10 15  
 gat gtt gac tgt aat aat atc ctg tca aca aac ttg ttc cac tgc aag 96  
 Asp Val Asp Cys Asn Asn Ile Leu Ser Thr Asn Leu Phe His Cys Lys  
 20 25 30  
 gac aag aac act ttt atc tat tca cgt cct gag cca gtg aag gcc atc 144  
 Asp Lys Asn Thr Phe Ile Tyr Ser Arg Pro Glu Pro Val Lys Ala Ile  
 35 40 45  
 tgt aaa gga att ata gcc tcc aaa aat gtg tta act acc ttt gag ttt 192  
 Cys Lys Gly Ile Ile Ala Ser Lys Asn Val Leu Thr Thr Phe Glu Phe  
 50 55 60  
 tat ctc tct gat tgc aat gta aca agc agg cct tgc aag tat aaa tta 240  
 Tyr Leu Ser Asp Cys Asn Val Thr Ser Arg Pro Cys Lys Tyr Lys Leu  
 65 70 75 80  
 aag aaa tca act att aca ttt tgt gta act tgt gag aat caa gct cca 288  
 Lys Lys Ser Thr Ile Thr Phe Cys Val Thr Cys Glu Asn Gln Ala Pro  
 85 90 95  
 gta cat ttc gtg ggt gtc gga cat tgc 315  
 Val His Phe Val Gly Val Gly His Cys  
 100 105

<210> 8  
 <211> 105  
 <212> PRT  
 <213> Artificial Sequence

<400> 8  
 Met Gln Asp Trp Leu Thr Phe Gln Lys Lys His Leu Thr Asn Thr Arg  
 1 5 10 15  
 Asp Val Asp Cys Asn Asn Ile Leu Ser Thr Asn Leu Phe His Cys Lys  
 20 25 30  
 Asp Lys Asn Thr Phe Ile Tyr Ser Arg Pro Glu Pro Val Lys Ala Ile  
 35 40 45

Cys Lys Gly Ile Ile Ala Ser Lys Asn Val Leu Thr Thr Phe Glu Phe  
     50                    55                    60  
 Tyr Leu Ser Asp Cys Asn Val Thr Ser Arg Pro Cys Lys Tyr Lys Leu  
     65                    70                    75                    80  
 Lys Lys Ser Thr Ile Thr Phe Cys Val Thr Cys Glu Asn Gln Ala Pro  
                     85                    90                    95  
 Val His Phe Val Gly Val Gly His Cys  
             100                    105

<210> 9  
 <211> 111  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:Rana pipiens  
         ribonuclease with (His)6 tag, Met at position 7  
         and Met30Leu substitution (recombinant Met(-1)  
         RaPLR1 Met23Leu-(His)6)

<400> 9  
 His His His His His His Met Gln Asp Trp Leu Thr Phe Gln Lys Lys  
     1                    5                    10                    15  
 His Leu Thr Asn Thr Arg Asp Val Asp Cys Asn Asn Ile Leu Ser Thr  
             20                    25                    30  
 Asn Leu Phe His Cys Lys Asp Lys Asn Thr Phe Ile Tyr Ser Arg Pro  
     35                    40                    45  
 Glu Pro Val Lys Ala Ile Cys Lys Gly Ile Ile Ala Ser Lys Asn Val  
     50                    55                    60  
 Leu Thr Thr Phe Glu Phe Tyr Leu Ser Asp Cys Asn Val Thr Ser Arg  
     65                    70                    75                    80  
 Pro Cys Lys Tyr Lys Leu Lys Lys Ser Thr Ile Thr Phe Cys Val Thr  
             85                    90                    95  
 Cys Glu Asn Gln Ala Pro Val His Phe Val Gly Val Gly His Cys  
     100                    105                    110

<210> 10  
 <211> 312  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:Rana pipiens  
         ribonuclease with Gln1Ser substitution  
         (recombinant RaPLR1 Q1S)

<220>  
 <221> CDS  
 <222> (1) .. (312)  
 <223> RaPLR1 Q1S

<400> 10																
tca	gac	tg	ctt	acg	ttt	cag	aag	aag	cac	ctg	aca	aac	acc	cgg	gat	48
Ser	Asp	Trp	Leu	Thr	Phe	Gln	Lys	Lys	His	Leu	Thr	Asn	Thr	Arg	Asp	
1				5				10				15				
gtt	gac	tgt	aat	aat	atc	atg	tca	aca	aac	ttg	ttc	cac	tgc	aag	gac	96
Val	Asp	Cys	Asn	Asn	Ile	Met	Ser	Thr	Asn	Leu	Phe	His	Cys	Lys	Asp	
			20			25			30							
aag	aac	act	ttt	atc	tat	tca	cgt	cct	gag	cca	gtg	aag	gcc	atc	tgt	144
Lys	Asn	Thr	Phe	Ile	Tyr	Ser	Arg	Pro	Glu	Pro	Val	Lys	Ala	Ile	Cys	
			35			40			45							
aaa	gga	att	ata	gcc	tcc	aaa	aat	gtg	tta	act	acc	tct	gag	ttt	tat	192
Lys	Gly	Ile	Ile	Ala	Ser	Lys	Asn	Val	Leu	Thr	Thr	Ser	Glu	Phe	Tyr	
50						55				60						
ctc	tct	gat	tgc	aat	gta	aca	agc	agg	cct	tgc	aag	tat	aaa	tta	aag	240
Leu	Ser	Asp	Cys	Asn	Val	Thr	Ser	Arg	Pro	Cys	Lys	Tyr	Lys	Leu	Lys	
65						70				75				80		
aaa	tca	act	aat	aca	ttt	tgt	gta	act	tgt	gag	aat	caa	gct	cca	gta	288
Lys	Ser	Thr	Asn	Thr	Phe	Cys	Val	Thr	Cys	Glu	Asn	Gln	Ala	Pro	Val	
				85				90				95				
cat	ttc	gtg	gg	gtc	gga	cat	tgc									312
His	Phe	Val	Gly	Val	Gly	His	Cys									
			100													

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<210> 11
<211> 104
<212> PRT
<213> Artificial Sequence
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<400> 11
Ser Asp Trp Leu Thr Phe Gln Lys Lys His Leu Thr Asn Thr Arg Asp
  1                               10                      15

Val Asp Cys Asn Asn Ile Met Ser Thr Asn Leu Phe His Cys Lys Asp
      20                               25                      30

Lys Asn Thr Phe Ile Tyr Ser Arg Pro Glu Pro Val Lys Ala Ile Cys
      35                               40                      45

Lys Gly Ile Ile Ala Ser Lys Asn Val Leu Thr Thr Ser Glu Phe Tyr
  50                               55                      60

Leu Ser Asp Cys Asn Val Thr Ser Arg Pro Cys Lys Tyr Lys Leu Lys
  65                               70                      75                      80

Lys Ser Thr Asn Thr Phe Cys Val Thr Cys Glu Asn Gln Ala Pro Val
      85                               90                      95

His Phe Val Gly Val Gly His Cys
      100

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<210> 12  
 <211> 315  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:Rana pipiens  
 ribonuclease with Met at position 1 and Gln2Ser  
 substitution (recombinant Met(-1) RaPLR1 Q1S)

<220>  
 <221> CDS  
 <222> (1)..(315)  
 <223> Met(-1) RaPLR1 Q1S

<400> 12  
 atg tca gac tgg ctt acg ttt cag aag aag cac ctg aca aac acc cgg 48  
 Met Ser Asp Trp Leu Thr Phe Gln Lys Lys His Leu Thr Asn Thr Arg  
 1 5 10 15  
 gat gtt gac tgt aat aat atc atg tca aca aac ttg ttc cac tgc aag 96  
 Asp Val Asp Cys Asn Asn Ile Met Ser Thr Asn Leu Phe His Cys Lys  
 20 25 30  
 gac aag aac act ttt atc tat tca cgt cct gag cca gtg aag gcc atc 144  
 Asp Lys Asn Thr Phe Ile Tyr Ser Arg Pro Glu Pro Val Lys Ala Ile  
 35 40 45  
 tgt aaa gga att ata gcc tcc aaa aat gtg tta act acc tct gag ttt 192  
 Cys Lys Gly Ile Ile Ala Ser Lys Asn Val Leu Thr Thr Ser Glu Phe  
 50 55 60  
 tat ctc tct gat tgc aat gta aca agc agg cct tgc aag tat aaa tta 240  
 Tyr Leu Ser Asp Cys Asn Val Thr Ser Arg Pro Cys Lys Tyr Lys Leu  
 65 70 75 80  
 aag aaa tca act aat aca ttt tgt gta act tgt gag aat caa gct cca 288  
 Lys Lys Ser Thr Asn Thr Phe Cys Val Thr Cys Glu Asn Gln Ala Pro  
 85 90 95  
 gta cat ttc gtg ggt gtc gga cat tgc 315  
 Val His Phe Val Gly Val Gly His Cys  
 100 105

<210> 13  
 <211> 105  
 <212> PRT  
 <213> Artificial Sequence

<400> 13  
 Met Ser Asp Trp Leu Thr Phe Gln Lys Lys His Leu Thr Asn Thr Arg  
 1 5 10 15  
 Asp Val Asp Cys Asn Asn Ile Met Ser Thr Asn Leu Phe His Cys Lys  
 20 25 30  
 Asp Lys Asn Thr Phe Ile Tyr Ser Arg Pro Glu Pro Val Lys Ala Ile  
 35 40 45



Cys Lys Gly Ile Ile Ala Ser Lys Asn Val Leu Thr Thr Ser Glu Phe  
     50                    55                    60  
 Tyr Leu Ser Asp Cys Asn Val Thr Ser Arg Pro Cys Lys Tyr Lys Leu  
     65                    70                    75                    80  
 Lys Lys Ser Thr Asn Thr Phe Cys Val Thr Cys Glu Asn Gln Ala Pro  
                     85                    90                    95  
 Val His Phe Val Gly Val Gly His Cys  
             100                    105

<210> 14  
 <211> 330  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:Rana  
       catesbeiana oocyte ribonuclease (RaCOR1) synthetic  
       gene modified to use E. coli preferred codons

<220>  
 <221> CDS  
 <222> (1)..(330)  
 <223> RaCOR1 for E. coli expression system

<400> 14  
 cag aac tgg gct act ttc cag cag aaa cat atc atc aac act ccg atc 48  
 Gln Asn Trp Ala Thr Phe Gln Gln Lys His Ile Ile Asn Thr Pro Ile  
     1                    5                    10                    15  
 atc tgc aac act atc atg gac aac aac atc tac atc gtt ggt ggt cag 96  
 Ile Cys Asn Thr Ile Met Asp Asn Asn Ile Tyr Ile Val Gly Gly Gln  
             20                    25                    30  
 tgc aaa cgt gtt aac act ttc atc atc tct tct gct act act gtt aaa 144  
 Cys Lys Arg Val Asn Thr Phe Ile Ile Ser Ser Ala Thr Thr Val Lys  
             35                    40                    45  
 gct atc tgc act ggt gtt atc aac atg aac gtt ctg tct act act cgt 192  
 Ala Ile Cys Thr Gly Val Ile Asn Met Asn Val Leu Ser Thr Thr Arg  
             50                    55                    60  
 ttc cag ctg aac act tgc act cgt act tct atc act ccg cgt ccg tgc 240  
 Phe Gln Leu Asn Thr Cys Thr Arg Thr Ser Ile Thr Pro Arg Pro Cys  
     65                    70                    75                    80  
 ccg tac tct tct cgt act gaa act aac tac atc tgc gtt aaa tgc gaa 288  
 Pro Tyr Ser Ser Arg Thr Glu Thr Asn Tyr Ile Cys Val Lys Cys Glu  
             85                    90                    95  
 aac cag tac ccg gtt cat ttc gct ggt atc ggt cgt tgc ccg 330  
 Asn Gln Tyr Pro Val His Phe Ala Gly Ile Gly Arg Cys Pro  
             100                    105                    110

<210> 15  
 <211> 110  
 <212> PRT  
 <213> Artificial Sequence

<400> 15  
 Gln Asn Trp Ala Thr Phe Gln Gln Lys His Ile Ile Asn Thr Pro Ile  
           1                  5                  10                  15  
 Ile Cys Asn Thr Ile Met Asp Asn Asn Ile Tyr Ile Val Gly Gly Gln  
                   20                  25                  30  
 Cys Lys Arg Val Asn Thr Phe Ile Ile Ser Ser Ala Thr Thr Val Lys  
                   35                  40                  45  
 Ala Ile Cys Thr Gly Val Ile Asn Met Asn Val Leu Ser Thr Thr Arg  
           50                  55                  60  
 Phe Gln Leu Asn Thr Cys Thr Arg Thr Ser Ile Thr Pro Arg Pro Cys  
           65                  70                  75                  80  
 Pro Tyr Ser Ser Arg Thr Glu Thr Asn Tyr Ile Cys Val Lys Cys Glu  
                   85                  90                  95  
 Asn Gln Tyr Pro Val His Phe Ala Gly Ile Gly Arg Cys Pro  
                   100                  105                  110

<210> 16  
 <211> 333  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:Rana  
       catesbeiana ribonuclease with Met at position 1  
       (recombinant Met(-1) RaCOR1)

<220>  
 <221> CDS  
 <222> (1)..(333)  
 <223> Met(-1) RaCOR1

<400> 16  
 atg cag aac tgg gct act ttc cag cag aaa cat atc atc aac act ccg 48  
 Met Gln Asn Trp Ala Thr Phe Gln Gln Lys His Ile Ile Asn Thr Pro  
           1                  5                  10                  15  
 atc atc tgc aac act atc atg gac aac aac atc tac atc gtt ggt ggt 96  
 Ile Ile Cys Asn Thr Ile Met Asp Asn Asn Ile Tyr Ile Val Gly Gly  
                   20                  25                  30  
 cag tgc aaa cgt gtt acc act ttc atc atc tct tct gct act act gtt 144  
 Gln Cys Lys Arg Val Thr Thr Phe Ile Ile Ser Ser Ala Thr Thr Val  
                   35                  40                  45  
 aaa gct atc tgc act ggt gtt atc aac atg aac gtt ctg tct act act 192  
 Lys Ala Ile Cys Thr Gly Val Ile Asn Met Asn Val Leu Ser Thr Thr  
           50                  55                  60

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cgt ttc cag ctg aac act tgc act cgt act tct atc act ccg cgt ccg      240
Arg Phe Gln Leu Asn Thr Cys Thr Arg Thr Ser Ile Thr Pro Arg Pro
  65                      70                      75                      80

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tgc ccg tac tct tct cgt act gaa act aac tac atc tgc gtt aaa tgc      288
Cys Pro Tyr Ser Ser Arg Thr Glu Thr Asn Tyr Ile Cys Val Lys Cys
                      85                      90                      95

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gaa aac cag tac ccg gtt cat ttc gct ggt atc ggt cgt tgc ccg      333
Glu Asn Gln Tyr Pro Val His Phe Ala Gly Ile Gly Arg Cys Pro
                      100                      105                      110

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<210> 17
<211> 111
<212> PRT
<213> Artificial Sequence

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<400> 17
Met Gln Asn Trp Ala Thr Phe Gln Gln Lys His Ile Ile Asn Thr Pro
  1                      5                      10                      15

Ile Ile Cys Asn Thr Ile Met Asp Asn Asn Ile Tyr Ile Val Gly Gly
                      20                      25                      30

Gln Cys Lys Arg Val Thr Thr Phe Ile Ile Ser Ser Ala Thr Thr Val
                      35                      40                      45

Lys Ala Ile Cys Thr Gly Val Ile Asn Met Asn Val Leu Ser Thr Thr
  50                      55                      60

Arg Phe Gln Leu Asn Thr Cys Thr Arg Thr Ser Ile Thr Pro Arg Pro
  65                      70                      75                      80

Cys Pro Tyr Ser Ser Arg Thr Glu Thr Asn Tyr Ile Cys Val Lys Cys
                      85                      90                      95

Glu Asn Gln Tyr Pro Val His Phe Ala Gly Ile Gly Arg Cys Pro
                      100                      105                      110

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<210> 18
<211> 330
<212> DNA
<213> Artificial Sequence

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<220>
<223> Description of Artificial Sequence:Rana
      catesbeiana ribonuclease with Met22Leu and
      Met75Leu substitutions (recombinant RaCOR1
      Met22Leu Met57Leu)

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<220>
<221> CDS
<222> (1)..(330)
<223> RaCOR1 Met22Leu Met57Leu

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<400> 18
cag aac tgg gct act ttc cag cag aaa cat atc atc aaa act ccg atc      48
Gln Asn Trp Ala Thr Phe Gln Gln Lys His Ile Ile Lys Thr Pro Ile
  1                      5                      10                      15

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atc tgc aac act atc ctg gac aac aac atc tac atc gtt ggt ggt cag	96
Ile Cys Asn Thr Ile Leu Asp Asn Asn Ile Tyr Ile Val Gly Gly Gln	
20 25 30	
tgc aaa cgt gtt aac act ttc atc atc tct tct gct act act gtt aaa	144
Cys Lys Arg Val Asn Thr Phe Ile Ile Ser Ser Ala Thr Thr Val Lys	
35 40 45	
gct atc tgc act ggt gtt atc aac ctg aac gtt ctg tct act act cgt	192
Ala Ile Cys Thr Gly Val Ile Asn Leu Asn Val Leu Ser Thr Thr Arg	
50 55 60	
ttc cag ctg aac act tgc act cgt act tct atc act ccg cgt ccg tgc	240
Phe Gln Leu Asn Thr Cys Thr Arg Thr Ser Ile Thr Pro Arg Pro Cys	
65 70 75 80	
ccg tac tct tct cgt act gaa act aac tac atc tgc gtt aaa tgc gaa	288
Pro Tyr Ser Ser Arg Thr Glu Thr Asn Tyr Ile Cys Val Lys Cys Glu	
85 90 95	
aac cag tac ccg gtt cat ttc gct ggt atc ggt cgt tgc ccg	330
Asn Gln Tyr Pro Val His Phe Ala Gly Ile Gly Arg Cys Pro	
100 105 110	

<210> 19  
 <211> 110  
 <212> PRT  
 <213> Artificial Sequence

<400> 19	
Gln Asn Trp Ala Thr Phe Gln Gln Lys His Ile Ile Lys Thr Pro Ile	
1 5 10 15	
Ile Cys Asn Thr Ile Leu Asp Asn Asn Ile Tyr Ile Val Gly Gly Gln	
20 25 30	
Cys Lys Arg Val Asn Thr Phe Ile Ile Ser Ser Ala Thr Thr Val Lys	
35 40 45	
Ala Ile Cys Thr Gly Val Ile Asn Leu Asn Val Leu Ser Thr Thr Arg	
50 55 60	
Phe Gln Leu Asn Thr Cys Thr Arg Thr Ser Ile Thr Pro Arg Pro Cys	
65 70 75 80	
Pro Tyr Ser Ser Arg Thr Glu Thr Asn Tyr Ile Cys Val Lys Cys Glu	
85 90 95	
Asn Gln Tyr Pro Val His Phe Ala Gly Ile Gly Arg Cys Pro	
100 105 110	

<210> 20  
 <211> 333  
 <212> DNA  
 <213> Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence:Rana  
catesbeiana ribonuclease with Met at position 1,  
Met23Leu and Met58Leu substitutions (recombinant  
Met(-1) RaCOR1 Met22Leu Met57Leu)

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1)..(333)

&lt;223&gt; Met(-1) RaCOR1 Met22Leu Met57Leu

&lt;400&gt; 20

atg	cag	aac	tgg	gct	act	ttc	cag	cag	aaa	cat	atc	atc	aac	act	ccg	48
Met	Gln	Asn	Trp	Ala	Thr	Phe	Gln	Gln	Lys	His	Ile	Ile	Asn	Thr	Pro	
1				5					10					15		
atc	atc	tgc	aac	act	atc	ctg	gac	aac	aac	atc	tac	atc	gtt	ggt	ggt	96
Ile	Ile	Cys	Asn	Thr	Ile	Leu	Asp	Asn	Asn	Ile	Tyr	Ile	Val	Gly	Gly	
			20					25					30			
cag	tgc	aaa	cgt	gtt	aac	act	ttc	atc	atc	tct	tct	gct	act	act	gtt	144
Gln	Cys	Lys	Arg	Val	Asn	Thr	Phe	Ile	Ile	Ser	Ser	Ala	Thr	Thr	Val	
			35				40					45				
aaa	gct	atc	tgc	act	ggt	gtt	atc	aac	ctg	aac	gtt	ctg	tct	act	act	192
Lys	Ala	Ile	Cys	Thr	Gly	Val	Ile	Asn	Leu	Asn	Val	Leu	Ser	Thr	Thr	
	50					55					60					
cgt	ttc	cag	ctg	aac	act	tgc	act	cgt	act	tct	atc	act	ccg	cgt	ccg	240
Arg	Phe	Gln	Leu	Asn	Thr	Cys	Thr	Arg	Thr	Ser	Ile	Thr	Pro	Arg	Pro	
65					70					75					80	
tgc	ccg	tac	tct	tct	cgt	act	gaa	act	aac	tac	atc	tgc	gtt	aaa	tgc	288
Cys	Pro	Tyr	Ser	Ser	Arg	Thr	Glu	Thr	Asn	Tyr	Ile	Cys	Val	Lys	Cys	
				85					90					95		
gaa	aac	cag	tac	ccg	gtt	cat	ttc	gct	ggt	atc	ggt	cgt	tgc	ccg		333
Glu	Asn	Gln	Tyr	Pro	Val	His	Phe	Ala	Gly	Ile	Gly	Arg	Cys	Pro		
			100					105					110			

&lt;210&gt; 21

&lt;211&gt; 111

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;400&gt; 21

Met	Gln	Asn	Trp	Ala	Thr	Phe	Gln	Gln	Lys	His	Ile	Ile	Asn	Thr	Pro
1				5					10					15	
Ile	Ile	Cys	Asn	Thr	Ile	Leu	Asp	Asn	Asn	Ile	Tyr	Ile	Val	Gly	Gly
			20					25					30		
Gln	Cys	Lys	Arg	Val	Asn	Thr	Phe	Ile	Ile	Ser	Ser	Ala	Thr	Thr	Val
			35				40					45			
Lys	Ala	Ile	Cys	Thr	Gly	Val	Ile	Asn	Leu	Asn	Val	Leu	Ser	Thr	Thr
	50					55				60					
Arg	Phe	Gln	Leu	Asn	Thr	Cys	Thr	Arg	Thr	Ser	Ile	Thr	Pro	Arg	Pro
65					70					75				80	

Cys Pro Tyr Ser Ser Arg Thr Glu Thr Asn Tyr Ile Cys Val Lys Cys  
                             85                            90                            95

Glu Asn Gln Tyr Pro Val His Phe Ala Gly Ile Gly Arg Cys Pro  
                             100                            105                            110

<210> 22  
 <211> 117  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:Rana  
       catesbeiana ribonuclease with (His)6 tag, Met at  
       position 7, Met23Leu and Met58Leu substitutions  
       (recombinant Met(-1) RaCOR1 Met22Leu Met57Leu-(His)6)

<400> 22  
 His His His His His Met Gln Asn Trp Ala Thr Phe Gln Gln Lys  
   1                            5                            10                            15  
 His Ile Ile Asn Thr Pro Ile Ile Cys Asn Thr Ile Leu Asp Asn Asn  
                             20                            25                            30  
 Ile Tyr Ile Val Gly Gly Gln Cys Lys Arg Val Asn Thr Phe Ile Ile  
                             35                            40                            45  
 Ser Ser Ala Thr Thr Val Lys Ala Ile Cys Thr Gly Val Ile Asn Leu  
                             50                            55                            60  
 Asn Val Leu Ser Thr Thr Arg Phe Gln Leu Asn Thr Cys Thr Arg Thr  
   65                            70                            75                            80  
 Ser Ile Thr Pro Arg Pro Cys Pro Tyr Ser Ser Arg Thr Glu Thr Asn  
                             85                            90                            95  
 Tyr Ile Cys Val Lys Cys Glu Asn Gln Tyr Pro Val His Phe Ala Gly  
                             100                            105                            110  
 Ile Gly Arg Cys Pro  
                             115

<210> 23  
 <211> 330  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:Rana  
       catesbeiana ribonuclease with Gln1Ser substitution  
       (recombinant RaCOR1 Q1S)

<220>  
 <221> CDS  
 <222> (1)..(330)  
 <223> RaCOR1 Q1S

&lt;400&gt; 23

tca	aac	tgg	gct	act	ttc	cag	cag	aaa	cat	atc	atc	aac	act	ccg	atc	48
Ser	Asn	Trp	Ala	Thr	Phe	Gln	Gln	Lys	His	Ile	Ile	Asn	Thr	Pro	Ile	
1				5					10					15		
atc	tgc	aac	act	atc	atg	gac	aac	aac	atc	tac	atc	gtt	ggg	ggg	cag	96
Ile	Cys	Asn	Thr	Ile	Met	Asp	Asn	Asn	Ile	Tyr	Ile	Val	Gly	Gly	Gln	
			20					25					30			
tgc	aaa	cgt	gtt	aac	act	ttc	atc	atc	tct	tct	gct	act	act	gtt	aaa	144
Cys	Lys	Arg	Val	Asn	Thr	Phe	Ile	Ile	Ser	Ser	Ala	Thr	Thr	Val	Lys	
		35					40					45				
gct	atc	tgc	act	ggg	gtt	atc	aac	atg	aac	gtt	ctg	tct	act	act	cgt	192
Ala	Ile	Cys	Thr	Gly	Val	Ile	Asn	Met	Asn	Val	Leu	Ser	Thr	Thr	Arg	
	50					55					60					
ttc	cag	ctg	aac	act	tgc	act	cgt	act	tct	atc	act	ccg	cgt	ccg	tgc	240
Phe	Gln	Leu	Asn	Thr	Cys	Thr	Arg	Thr	Ser	Ile	Thr	Pro	Arg	Pro	Cys	
	65				70					75					80	
ccg	tac	tct	tct	cgt	act	gaa	act	aac	tac	atc	tgc	gtt	aaa	tgc	gaa	288
Pro	Tyr	Ser	Ser	Arg	Thr	Glu	Thr	Asn	Tyr	Ile	Cys	Val	Lys	Cys	Glu	
				85					90					95		
aac	cag	tac	ccg	gtt	cat	ttc	gct	ggg	atc	ggg	cgt	tgc	ccg			330
Asn	Gln	Tyr	Pro	Val	His	Phe	Ala	Gly	Ile	Gly	Arg	Cys	Pro			
			100					105					110			

&lt;210&gt; 24

&lt;211&gt; 110

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;400&gt; 24

Ser	Asn	Trp	Ala	Thr	Phe	Gln	Gln	Lys	His	Ile	Ile	Asn	Thr	Pro	Ile	
1				5					10					15		
Ile	Cys	Asn	Thr	Ile	Met	Asp	Asn	Asn	Ile	Tyr	Ile	Val	Gly	Gly	Gln	
			20					25					30			
Cys	Lys	Arg	Val	Asn	Thr	Phe	Ile	Ile	Ser	Ser	Ala	Thr	Thr	Val	Lys	
		35					40					45				
Ala	Ile	Cys	Thr	Gly	Val	Ile	Asn	Met	Asn	Val	Leu	Ser	Thr	Thr	Arg	
	50					55					60					
Phe	Gln	Leu	Asn	Thr	Cys	Thr	Arg	Thr	Ser	Ile	Thr	Pro	Arg	Pro	Cys	
	65				70					75					80	
Pro	Tyr	Ser	Ser	Arg	Thr	Glu	Thr	Asn	Tyr	Ile	Cys	Val	Lys	Cys	Glu	
				85					90					95		
Asn	Gln	Tyr	Pro	Val	His	Phe	Ala	Gly	Ile	Gly	Arg	Cys	Pro			
			100					105					110			

<210> 25  
 <211> 333  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Rana  
 catesbeiana ribonuclease with Met at position 1  
 and Gln2Ser substitution

<220>

<221> CDS

<222> ()..(333)

<223> Met(-1) RaCOR1 Q1S

<400> 25

atg tca aac tgg gct act ttc cag cag aaa cat atc atc aac act ccg	48
Met Ser Asn Trp Ala Thr Phe Gln Gln Lys His Ile Ile Asn Thr Pro	
1 5 10 15	
atc atc tgc aac act atc atg gac aac aac atc tac atc gtt ggt ggt	96
Ile Ile Cys Asn Thr Ile Met Asp Asn Asn Ile Tyr Ile Val Gly Gly	
20 25 30	
cag tgc aaa cgt gtt aac act ttc atc atc tct tct gct act act gtt	144
Gln Cys Lys Arg Val Asn Thr Phe Ile Ile Ser Ser Ala Thr Thr Val	
35 40 45	
aaa gct atc tgc act ggt gtt atc aac atg aac gtt ctg tct act act	192
Lys Ala Ile Cys Thr Gly Val Ile Asn Met Asn Val Leu Ser Thr Thr	
50 55 60	
cgt ttc cag ctg aac act tgc act cgt act tct atc act ccg cgt ccg	240
Arg Phe Gln Leu Asn Thr Cys Thr Arg Thr Ser Ile Thr Pro Arg Pro	
65 70 75 80	
tgc ccg tac tct tct cgt act gaa act aac tac atc tgc gtt aaa tgc	288
Cys Pro Tyr Ser Ser Arg Thr Glu Thr Asn Tyr Ile Cys Val Lys Cys	
85 90 95	
gaa aac cag tac ccg gtt cat ttc gct ggt atc ggt cgt tgc ccg	333
Glu Asn Gln Tyr Pro Val His Phe Ala Gly Ile Gly Arg Cys Pro	
100 105 110	

<210> 26  
 <211> 111  
 <212> PRT  
 <213> Artificial Sequence

<400> 26

Met Ser Asn Trp Ala Thr Phe Gln Gln Lys His Ile Ile Asn Thr Pro	
1 5 10 15	
Ile Ile Cys Asn Thr Ile Met Asp Asn Asn Ile Tyr Ile Val Gly Gly	
20 25 30	
Gln Cys Lys Arg Val Asn Thr Phe Ile Ile Ser Ser Ala Thr Thr Val	
35 40 45	



Lys	Ala	Ile	Cys	Thr	Gly	Val	Ile	Asn	Met	Asn	Val	Leu	Ser	Thr	Thr
50						55					60				
Arg	Phe	Gln	Leu	Asn	Thr	Cys	Thr	Arg	Thr	Ser	Ile	Thr	Pro	Arg	Pro
65					70					75					80
Cys	Pro	Tyr	Ser	Ser	Arg	Thr	Glu	Thr	Asn	Tyr	Ile	Cys	Val	Lys	Cys
				85					90					95	
Glu	Asn	Gln	Tyr	Pro	Val	His	Phe	Ala	Gly	Ile	Gly	Arg	Cys	Pro	
			100					105					110		

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<210> 27
<211> 2855
<212> DNA
<213> Rana pipiens
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<220>
<223> Rana pipiens ribonuclease (RaPLR1) Clone 5a1b cDNA
insert
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<220>
<221> CDS
<222> (97) .. (481)
<223> RaPLR1
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<220>
<221> sig_peptide
<222> (97)..(165)
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<400> 27																	
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tctcttatat	ataaaaggcct	gatcacgact	tccaga	atg	ttt	cca	aaa	ttc	tca	114							
				Met	Phe	Pro	Lys	Phe	Ser								
				1				5									
ttt	ctc	ctg	ata	ttt	gca	ggt	ggt	ttg	agt	ctc	act	cat	aag	tcc	tta	162	
Phe	Leu	Leu	Ile	Phe	Ala	Val	Val	Leu	Ser	Leu	Thr	His	Lys	Ser	Leu		
			10					15					20				
tgt	caa	gac	tgg	ctt	acg	ttt	cag	aag	aag	cac	ctg	aca	aac	acc	cgg	210	
Cys	Gln	Asp	Trp	Leu	Thr	Phe	Gln	Lys	Lys	His	Leu	Thr	Asn	Thr	Arg		
			25				30					35					
gat	ggt	gac	tgt	aat	aat	atc	atg	tca	aca	aac	ttg	ttc	cac	tgc	aag	258	
Asp	Val	Asp	Cys	Asn	Asn	Ile	Met	Ser	Thr	Asn	Leu	Phe	His	Cys	Lys		
			40				45				50						
gac	aag	aac	act	ttt	atc	tat	tca	cgt	cct	gag	cca	gtg	aag	gcc	atc	306	
Asp	Lys	Asn	Thr	Phe	Ile	Tyr	Ser	Arg	Pro	Glu	Pro	Val	Lys	Ala	Ile		
			55			60				65					70		
tgt	aaa	gga	att	ata	gcc	tcc	aaa	aat	gtg	tta	act	acc	tct	gag	ttt	354	
Cys	Lys	Gly	Ile	Ile	Ala	Ser	Lys	Asn	Val	Leu	Thr	Thr	Ser	Glu	Phe		
									80					85			
tat	ctc	tct	gat	tgc	aat	gta	aca	agc	agg	cct	tgc	aag	tat	aaa	tta	402	
Tyr	Leu	Ser	Asp	Cys	Asn	Val	Thr	Ser	Arg	Pro	Cys	Lys	Tyr	Lys	Leu		
			90					95					100				

aag aaa tca act aat aca ttt tgt gta act tgt gag aat caa gct cca 450  
Lys Lys Ser Thr Asn Thr Phe Cys Val Thr Cys Glu Asn Gln Ala Pro  
105 110 115

gta cat ttc gtg ggt gtc gga cat tgc tagaaatatg tttgacaaca 497  
Val His Phe Val Gly Val Gly His Cys  
120 125

gggatgtgat aagcagctgc aagaaattat tttgaagtga atttactaaa gacactaatt 557  
ttgcataaat tttccccaga gcttaccggt agtaagaaaa ttccaacagg gagccaagca 617  
cagaaagtaa actaaggagc caaagtaatt ataaaagtca cactggaccg ctgctactgc 677  
actcagatga ccaaatgaga aacagacaaa aacagcagag ttgggaagcg cagatccggg 737  
aggtggcggg gagtcaattg gggatggagt ccatgtgaga tttggaaccg tttgttgctg 797  
gtgaagcatg tggccggtgc acagtacaca tggggaaaga tagtcggatt ggccgggctc 857  
gctgtggtgg tgccggcggg tgagccaaag gtggtgggga gatggctgtc ccccttctg 917  
tgggggctgt ggacagaggg agctgcggac caggggtggg aggcttgag agaattttca 977  
aacagctgac gtggccgggg ctgggcagca tcggggaggg gaagggtgg gctcagatcc 1037  
aggaagcatg gtcactgtat gaccagagt gaagatggca gagccgctgc agtggccggg 1097  
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ggtaaccgct cccagctgtt tgggggtgtt ttcgggcttc gcatttttgg tctgcggctc 1217  
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gttggttct tggcacctcc tggatctgtg ctttccaatt ctgttttttc cccagcgctt 1457  
agtggatgca gtgaaactct ggtgattacc atcatccaat catgtgcaag aaaaaatatt 1517  
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gggaaaatga gtgcaactgc acttccaaag ttcacagtct atttgccttt agtaaatacca 1637  
ccccattatt tctgagcaga ggacaaatct atggcaacaa aaaaacttta cctactgaat 1697  
tattttatat tgattgaaga taatctttct ttcatttcct aaatattgta atcaaaatta 1757  
atacataaca gctatgtatt ataccacagc agcaaatggt aaaatagttt taaacgtaaa 1817  
atatgtttta ccttaaagtg gaagtaaact tctatcacta aattttacct ataggtgaga 1877  
cccatgcgct cttcaggaat ggccgctggt gctgttcctt cagagccctg tgctgcgaac 1937  
ggcggctccc gtgtgcatgt acaggagtga cgtcatcaca gctccggcca gtcacagagt 1997  
tagagttcaa gtgtgagtgg cttgagccac gatgatgtcg ctcccaaaca tgtgtgcggg 2057  
ggtctccggt tgccggcgag gacactgggg gaatagcatg ggtgtgccgt tccttcagag 2117

catatgcgtg ggtgacgtca ctagctgcat ctaaagtaat atctcctaaa caatgcacat 2177  
 ttaggagata gttacagtac ctatgggtaa gccttattgt aggcttacct ataggtaaaa 2237  
 atcatgcatg ggagtttact tccatgtagg gatgaggaga gcaggctgac atattaaagt 2297  
 aaaaatctta cctatgtagg gatgaggaga gcaggctgac atattaaagt aaaaatctta 2357  
 cctatagtgg ttgaaagtag ttgaaaataa gatggcctgc agggctctta aaaggctagg 2417  
 atagcacagt atccacatga ggcaccagat ctcgctcccc cacacatgag tagcaaggag 2477  
 caatggtaat gtgagtttct taggctcgac cgttaaatag cgttggccct ccaagtgata 2537  
 catgggagat aagcagatgt ccgcgtatgc acgcagacat atgtgggcgg atgttgggat 2597  
 aggacgatca gagagatgct cagatctgcc cgaaggagaa aggtggaaac atccattcaa 2657  
 tgtcatatgc ctaaagaagc caccacat aaaaagttaa tagatcatca ggtggcagcc 2717  
 aaccacacca ggcccaaagg agggtgggcc cagtgaaccg tataggaaca gcactcagct 2777  
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 aaaaaaaaaa aaaaaaaaaa 2855

<210> 28

<211> 127

<212> PRT

<213> Rana pipiens

<400> 28

Met Phe Pro Lys Phe Ser Phe Leu Leu Ile Phe Ala Val Val Leu Ser  
 1 5 10 15

Leu Thr His Lys Ser Leu Cys Gln Asp Trp Leu Thr Phe Gln Lys Lys  
 20 25 30

His Leu Thr Asn Thr Arg Asp Val Asp Cys Asn Asn Ile Met Ser Thr  
 35 40 45

Asn Leu Phe His Cys Lys Asp Lys Asn Thr Phe Ile Tyr Ser Arg Pro  
 50 55 60

Glu Pro Val Lys Ala Ile Cys Lys Gly Ile Ile Ala Ser Lys Asn Val  
 65 70 75 80

Leu Thr Thr Ser Glu Phe Tyr Leu Ser Asp Cys Asn Val Thr Ser Arg  
 85 90 95

Pro Cys Lys Tyr Lys Leu Lys Lys Ser Thr Asn Thr Phe Cys Val Thr  
 100 105 110

Cys Glu Asn Gln Ala Pro Val His Phe Val Gly Val Gly His Cys  
 115 120 125

<210> 29  
 <211> 4  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:CAAX motif to  
 target heterologous proteins to the plasma  
 membrane, where A = aliphatic amino acid and  
 X = Ser, Met, Cys, Ala or Gln

<400> 29  
 Cys Val Ile Met  
 1

<210> 30  
 <211> 27  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:Rana pipiens  
 Onconase degenerate forward primer

<400> 30  
 aagatggtkg attgygataa yatcatg

27

<210> 31  
 <211> 27  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:Rana pipiens  
 Onconase degenerate reverse primer

<400> 31  
 aaartgmacw ggkgcctgrt tytcaca

27

<210> 32  
 <211> 96  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:Rana  
 catesbeiana ribonuclease synthetic gene (RaCOR1)  
 oligonucleotide

<400> 32  
 cagaactggg ctactttcca gcagaaacat atcatcaaca ctccgatcat ctgcaacact 60  
 atcatggaca acaacatcta catcgttggg ggtcag

96

<210> 33  
 <211> 86  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Rana  
 catesbeiana ribonuclease synthetic gene (RaCOR1)  
 oligonucleotide

<400> 33  
 tacatcggtg gtggtcagtg caaacgtgtt aacactttca tcactctctt gctactactg 60  
 ttaaacgtat ctgcactggt gttatc 86

<210> 34  
 <211> 96  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Rana  
 catesbeiana ribonuclease synthetic gene (RaCOR1)  
 oligonucleotide

<400> 34  
 atctgcactg gtgttactaa catgaacgtt ctgtctacta ctcgtttcca gctgaacact 60  
 tgcactcgta cttctatcac tccgcgtccg tgcccg 96

<210> 35  
 <211> 21  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Rana  
 catesbeiana ribonuclease synthetic gene (RaCOR1)  
 oligonucleotide

<400> 35  
 gttgataaca ccagtcgaga t 21

<210> 36  
 <211> 21  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Rana  
 catesbeiana ribonuclease synthetic gene (RaCOR1)  
 oligonucleotide

<400> 36  
 atctgcactg gtgttatcaa c 21

<210> 37  
 <211> 95  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:Rana  
       catesbeiana ribonuclease synthetic gene (RaCOR1)  
       oligonucleotide

<400> 37  
 actccgcgtc cgtgcccgtg ctcttctcgt actgaaacta actacatctg cgttaaactgc 60  
 gaaaaccagt acccggttca tttcgctggt atcgg 95

<210> 38  
 <211> 71  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:Rana  
       catesbeiana ribonuclease synthetic gene (RaCOR1)  
       oligonucleotide

<400> 38  
 atatatctag aaataatttt atttaacttt aagaaggaga tatacatatg cagaactggg 60  
 ctactttcca g 71

<210> 39  
 <211> 48  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:Rana  
       catesbeiana ribonuclease synthetic gene (RaCOR1)  
       oligonucleotide

<400> 39  
 cgcgcgggat ccctactacg ggcaacgacc gataccagcg aaatgaac 48

<210> 40  
 <211> 96  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:Rana  
       catesbeiana ribonuclease synthetic gene (RaCOR1)  
       oligonucleotide

<400> 40  
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 atcctgcaga acaacatcta catcgttggt ggtagc 96

<210> 41  
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 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Rana  
 catesbeiana ribonuclease synthetic gene (RaCOR1)  
 oligonucleotide

<400> 41  
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 tgcactcgta cttctatcac tccgcgtccg tgcccg 96

<210> 42  
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 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Rana  
 catesbeiana insertion primer for NdeI restriction  
 site

<400> 42  
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<210> 43  
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<220>

<223> Description of Artificial Sequence:six histidine  
 residue tag at amino terminus

<400> 43  
 His His His His His His  
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